AMERICAN BEE JOURNAL

DEVOTED EXCLUSIVELY TO THE INTERESTS OF HONEY-PRODUCERS

ESTABLISHED IN 1861

THE OLDEST BEE-PAPER IN AMERICA

Published Weekly, at $1.00 per annum. *Sample Copy sent on Application.*

36th Year. CHICAGO, ILL., JAN. 16, 1896. No. 3.

Contributed Articles.

Bees Eating in Winter Quarters.

BY D. W. HEISE.

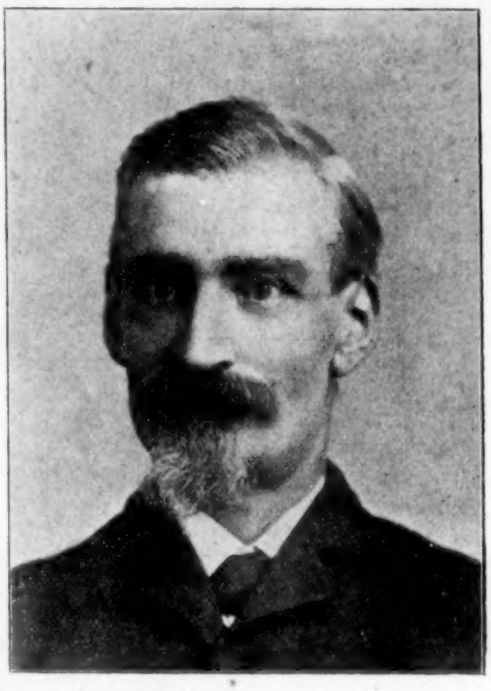
What a whole-hearted bee-keeper Mr. Cotton is. On page 783 (1895), he already asks me to forward that pig-tail; and not the tail only, but the whole carcass clear up to the ears! Verily, Mr. Cotton knows a good thing when he sees it! But he wants me to send the premium before he has complied with the conditions upon which it was offered. He wants me to make the experiment, and determine for myself whether his contention is founded on facts, or merely theory. I am not at all anxious to make the experiment, which he outlines for me, just at present, because I never like to disturb my bees after they have "gone to bed" for their long winter's repose, except in cases of extreme necessity. In the meantime "let us reason together" a little in a friendly way, for I am sure neither of us want to quarrel, much less fight, over this matter. And if we did, it would not be possible for us to injure each other very seriously, knowing that we are about 1,000 miles apart; and more than that, we are bee-keepers, and supposed to be good-natured.

I presume, from the certainty with which Mr. Cotton affirms that his statements are correct, that he has an experiment similar to the one he outlined for me. If so, please let us have all the facts and figures in connection therewith, and perhaps that will satisfy me, and victory may yet perch on his banner.

Now here are a few thoughts which will perhaps enable us to get at the facts in the case without much laborious experimenting: Is it not accepted as an established fact, by all experienced bee-keepers, that bees will consume more food when wintered on the summer stands, than when wintered in the cellar? but yet they *do* consume honey when in the cellar. But, according to Mr. C's theory, they would not, because they do not, and cannot, fly out from the time they are put into it in the fall, until they are taken out in the spring.

Again, what is it, I ask, that causes the difference in honey consumption, with wintering in the cellar or out-doors—is it only from the fact that the temperature is more uniform, and therefore they keep more quiet? or is it not also reasonable to suppose that they have to comsume more food when in a low temperature in order to keep up animal heat? Now if the latter supposition figures in the difference—and I truly believe it does—how would they keep up animal heat without any nourishment for three or four months of confinement in a low temperature?

It is too generally supposed by bee-keepers in this country—I do not know whether upon good authority or not—that bees must have access to food every four or five days in cold weather in order to sustain life; and I have had several instances to come under my notice during my short bee-keeping experience, which, if it does not thoroughly prove the matter, it certainly goes a long way towards showing that my supposition is well founded. For instance, during the month of February, 1895, on a fine day when some bees were flying from all the hives except one, wanting to know what was wrong, I listened at the entrance after tapping upon the hive. No response; all was still as death; and upon lifting the cap, such was really the case. Now, I would ask Mr. Cotton, what was the cause of this colony's death? He may say disease; but I say no, for there were no perceivable signs of disease—the combs were clean and dry; no spotting of hive, etc.; but they were dead. He may say they froze. I cannot swallow that, either, for I am not the only one who will tell you that a healthy colony of bees will withstand almost any degree of



Mr. Adrian Getaz, Knoxville, Tenn.—See page 41.

cold, providing they keep dry and have free access to good honey. Then why did they die? Why, bless your heart, they starved to death!

You say, bad management. I say, not so, for they had plenty of good sealed honey right in the hive, and yet they starved, for the very reason that the honey was on the one side of the hive and the cluster on the other. The honey had all been consumed around and about the cluster, and I have no doubt, had the weather been warm enough for the bees to break cluster, and move toward the honey, that colony would have survived along with the others. But according to Mr. Cotton's theory they filled themselves after returning from a

flight, and never ate another drop, but just "done gone and died."

Now, is it reasonable to suppose that when they returned they filled themselves, and then clustered in that part of the hive where there was no honey, and there died? Perhaps bees in Missouri are so stupid, but I think mine at Bethesda are not quite so foolish—at least I hope not.

Another point: I have known bees to carry down pound after pound of section honey in the dead of winter, when they were short of stores; and if my memory is not at fault, I say they did not fly out while thus engaged. I would ask Mr. Cotton, candidly, did they carry that honey down and consume it? or did they merely store it, awaiting an opportunity for a flight to make a meal of it? I hold to the former idea.

If it were not for drawing out this article, which is already too long, I could point to several other circumstances along this line, in support of my contention, but I will save my ammunition for future friendly battle. I said in my former article, that I was satisfied Mr. Cotton's idea would not hold good at Bethesda; his last article has not led me to change my mind in any way; but I might modify it a little by saying I do not *think* it well.

Mr. C. asks me what the bees do with so much food as I speak of. I don't know. I never was inside the hive to watch, but I suppose they eat and consume it, and certainly absorb a large portion of it, because it was in the hive in the fall, and was not there in the spring. What else could they do with it, unless they carry it out of the hive to be wasted, which is not their nature?

Now if I am wrong in any of my statements, I wish to be set aright, for you know Rochefaucald said that no person is more frequently wrong than he who will not admit he is wrong.

Bethesda, Ont.

Some Subjects Reviewed and Commented Upon

BY DR. C. C. MILLER.

Bee-Keepers' Associations.—Referring to page 809 (1895) Hon. Geo. E. Hilton writes: "If a bee-keepers' organization could be effected in every township within 200 miles of me, it would pay me to employ *two* assistants to assist in the organization." Which leaves me quivering with curiosity for further explanation. *How* would it pay him? Lecturing, selling supplies, or what?

Dadant with His Big Hives.—Chas. Dadant certainly makes a strong showing in favor of plenty of room in the brood-chamber, and I'm looking with interest for some reply from the advocates of small hives. I'd like to see the two D's lock horns—he of Borodino and the Frenchman. What about a big lot of bees reared too late to work on the harvest? Even if it be admitted that the 8-frame hive is too small, why, Mr. Dadant, can't we use two of them for each colony?

The New Adornments.—No. 1 of the "Old Reliable" for 1896 looks quite dainty with its new head-dress, neck-ribbon and bracelets. If I should desire any change, it would be to have the name in very plain type on the first page with no ornamentation whatever. But that might be too severely plain for the general taste, and the general taste should be consulted. There's a wee bit of conflict between the title page and the headings of the other pages, there being no "The" in the title on the first page. I think I like the new name better, though come to look it up there's nothing new about it. At any rate, the shorter name is better.

The Fun of Bee-Keeping.—I want to thank F. L. Thompson for some of the things he has said, and said well, in his article, "Specialty *vs.* Mixed Bee-Keeping," on page 1. I'm not entirely certain that I know exactly what "specialty" means when applied to bee-keeping, but I am certain that a man may be happier in a pursuit that accords with his tastes, and that keeps him constantly on the alert with inviting problems, than if he had no other thought than making money. And I'm not in sympathy with the sentiment that the love or enjoyment of a pursuit goes out of it as money comes in.

Bee-Master will never live to see a class of bee-keepers who keep bees for the love of it, if no such class now exists. If it were not for the love of it I should have been out of it long ago, for I could, and did, make more money in other ways.

I'm not so sure about that paragraph that begins, "Specialty means broad-mindedness." No doubt, as the writer had it in mind, it's all right, but I have known those who stuck so exclusively to a specialty that they were narrowed by it. But the next paragraph, beginning "Specialty means happiness," I'll swallow whole without blinking.

Do Field-Bees Play?—On page 824 (1895) Wm. S. Barclay endorses, as well he may, the idea that long life in a strain of bees is a thing to be desired, but when he broaches such a revolutionary idea as that there may be such a thing as field-bees fooling away part of their time in play, one is led to say, "Why, bees are models of industry, and never play after they commence work in the fields." Did ever any one during harvest time detect in the act of playing in front of the hive a worker with ragged wings? There ought to be something more than circumstantial evidence to make one accept such a revolutionary idea. And yet it has always been admitted that there was a difference in the industry of different colonies? Now if one colony may be more industrious than another, it follows that one colony may be less industrious than another, which is only another way of saying that one colony may be more idle than another; from which it is not such a very long step to saying that a colony may be so idle in character that some of its field-bees will play instead of work. It will do no harm, at least, to inquire whether such a thing may be, or not.

California Through Prof. Cook's Glasses.—For years I've read the glowing accounts of matters and things in California—its climate, flowers, fruits and bees—and have remained proof against all its blandishments, but after reading Prof. Cook's article on page 2, with the thermometer within nine degrees of zero here, oranges 40 cents a dozen, and no strawberries for months, to say nothing of 150 pounds per colony, and the good society and all, I could hardly help thinking maybe it might be a good thing for a young fellow like me to take a fresh start in a new spot, especially after my wife saying, "Let's sell out and go." Say, Professor, hold on. "No more o' that, an' thou lovest me." It won't do for every one to pack up for California; some one must stay to help gather the nectar in latitude 42° north.

Black Bees.—"Get some black bees," says S. M. Robertson, on page 13, in view, I suppose, of the fact that I've had two years of failure and he's had two of the best seasons he ever saw. I'd like to accommodate you, Mr. Robertson, but please give me some reason for getting the black imps. With the bees I have, I've done twice as well in a good season as you have in your best season. And I live in a poor honey district. I've had blacks a plenty, and they don't do as well as Italians.

Opening Hives.—Queer that so many replies on page 15 seemed to resent the question there given as an implied charge that they opened hives too much. No less than eight of them refuse to answer the question, and poutingly say they don't do it at all unless they ought. Why, who said you did?

Marengo, Ill.

Advantages of Divisible Brood-Chamber Hives

BY REV. WM. ANDERSON.

Apropos to the discussion in the American Bee Journal on the question of the best hive for general use, I may be permitted to give my experience, covering a period of 12 years, during which I have experimented with nearly all the hives which have gained a reasonable degree of popularity.

I began bee-keeping when a mere boy, in my native country—Scotland—by transferring bumble-bees' nests into old kettles, pans and boxes, and had them as neatly arranged in our flower-garden as the best-kept modern apiary. Later, I became the happy owner of a straw skep, and still later, together with my brother, purchased several American Langstroth hives.

On coming to this country, 13 years ago, I began keeping bees in several different kinds of hives, all modifications of the Langstroth, including the Simplicity, the Baker, and the old Heddon, etc.

When the New Heddon hive was placed on the market, I purchased a sample and tested its merits for two years by the side of the others. One after another my loose frame hives were broken into kindling-wood, and replaced by the New Heddon. I now have all my bees in the latter hive, numbering 30 colonies, and I will give my reasons for preferring the New Heddon to all others I have tested.

I need scarcely say that I have no ax to grind in the matter, and that I owe Mr. Heddon no other debt than that grati-

tude and public acknowledgment to which every inventor of a labor-saving device is entitled.

The merits of the "New Heddon" are of a kind that do not show up on the surface, and hence for the novice in bee-keeping, who owns but a colony or two, and expects to treat these as a boy does his first watch, I would suggest the loose, pendant frame and Langstroth hive.

When one has advanced so far in the knowledge of bees as to diagnose the contents of a hive from the alighting-board without lifting a cover, he will then be in a position to appreciate fully the merits of the Heddon.

1st. This hive solves the vexing problem of a large or small brood-nest, by permitting the apiarist at will, and with the very smallest modicum of effort, to increase or diminish it, *ad libitum*.

2nd. The reversibility of its frames, and the interchangeability of its divisions are of untold value in securing compact, solid combs, which will never break with ordinary usage, and in making the task of manipulating, whether in swarming or extracting time, a pleasure rather than a toil.

3rd. The shake-out principle I have found feasible with black or German strains of bees, and when the brood-nest was not filled with honey—which it should not be permitted to be until the close of the honey season.

4th. For securing both comb and extracted honey, the surplus arrangements of the Heddon I have found most serviceable in affording a No. 1 filled section; and with the help

The New Heddon Divisible-Brood-Chamber Hive.

of the Porter bee-escape, in making the removal and transference from apiary to extracting-room easy and safe. The handling of combs does not take place until all bees have removed from the super, and the latter in the extracting-room.

5th. As a hive for the migratory bee-keeper, or for the large owner with out-apiaries, the Heddon is *par excellence*. As a minister, I have had occasion to change my place of residence, on an average, once in five or six years. I put 28 colonies into a freight car with my household goods in the month of August, 1894, and transferred them a distance of 400 miles with but the loss of a single colony, and without any accident to either my father or our family horse, both having had their quarters in the car by the side of the bees. With the light, and tight-fitting, appliances of the Heddon hive, the work was simple, which otherwise would have been impossible.

6th. As a hive for wintering, the advantage of the Heddon is in permitting the apiarist to adopt the size of the repository to the strength of the colony with the least labor, by using the single or double case. I have found that bees winter in the cellar equally well in the double and single cases.

7th. This hive affords the speediest and safest means of natural and artificial swarming, and when once the system of manipulation is mastered, the apiarist has his bees very largely under his control.

An objection to the hive has been placed in the difficulty experienced by some in finding the queen-bee. I think Mr. R. L. Taylor, of Lapeer, Mich., was the first to publish an easy method of securing her majesty in the hive, viz.: By placing an empty case on top of the brood-nest over a queen-excluding honey-board, administering a few puffs of smoke at the entrance, meanwhile rapping on the sides and back of the hive for one minute; then suddenly removing the honey-board, the queen will almost invariably be found on the under side of the honey-board, attempting to force her passage, and demoralized with the rest of the colony, may always be readily captured.

Another objection has been the difficulty of keeping the thumb-screws from expanding, and even the frames, in a damp cellar or in wet weather, so as to become unmanageable without the aid of a wrench and a pry-chisel. Propolis, too, will cause trouble in the brood-chamber in the fall, so as to prevent easy manipulation. At first this seemed to me a somewhat serious objection, but latterly, as I became expert in the use of the above aids, the objection ceased.

Again, it has been objected that the queen will not pass readily from one section of the brood-chamber to the other, and hence the work of brood-rearing is retarded. With me the facts do not sustain this objection to any appreciable extent. I think it must be relegated to the domain of mere theory. I have noticed that when a queen wishes to lay eggs she will find empty cells anywhere above or below, as soon as the bees have formed passageways, which they invariably do the first thing after manipulating the hive during breeding-time. A queen will traverse the entire depth of the brood chamber and deposit eggs in empty cells several times in 24 hours, if there is occasion, and if she is a queen worth her salt.

Bureau Co., Ill.

That Building for Wintering Bees.

BY L. M. WILLIS.

On page 823 are some questions from Dr. Miller, asked about my article on wintering bees in a building not frost-proof. In reply thereto I may say that I believe that the stuffed wall insures dryness, which, to me, is one of the most essential parts of wintering.

The building I use is 10 by 24 feet, outside measure, but I have used only one end of it for my bees, making the room where the bees are, 10 by 12 feet, less the packing of 12 inches all around, or 8 by 10 feet inside. I have 44 colonies in this room now. I have kept from 3 to 28 in it. I have used this room three winters, this making the fourth.

The only loss I have had was one colony that for some reason left the hive before it was time to take them out, and they were lost in the room among the other hives. This colony had about 30 pounds of honey in the hive they left, and the hive and combs were perfectly clean and dry. I think that they became uneasy toward spring.

I put my bees into this room on Dec. 2, 1895; in 1894 I put them into winter quarters on Nov. 27. I leave them out until it becomes cold enough to show a little frost on the underside of the honey-board. I think this is a better guide than Nov. 15, because my bees had a nice flight after that date the past fall.

I have tried to winter bees in the cellar under the house, and had dead bees in the spring because the combs became moldy.

I have not had any spring dwindling since using the room described for wintering. I always put some rye flour out when I put the bees on the summer stands. For the flour I use a piece of board 12 inches square, with one-inch strips nailed on the upper side, around three sides. On these strips I place a small pane of glass, after putting a teacupful of rye flour on the board. The bees will take this flour into their hives pretty quick after they get a taste of it; and it helps to start breeding early.

Loyal, Wis.

Bee-Hives for the General Farmer.

BY E. H. GABUS.

On page 747 (1895) there appeared an article entitled, "Bee-Hives for Farmers—Needs Verification," wherein the writer cannot call to mind any article of Father Langstroth advising the mass of farmers not to use the movable-frame hive he had invented. In the article referred to, published in the Farmers' Friend, in 1888, Father Langstroth says:

"I believe farmers would have better success with their bees if they used only the old straw or box hives. A simple tool in the hands of one who knows how to use it, will turn out much better work than an improved implement whose proper use has never been learned."

He says also in the same article: "I believe that if the mass of our farmers could be *persuaded* to resume bee-keeping with the old-fashioned straw-hive, there would not only be a large increase in the number of bees, but also in a short time a larger increase in the number of movable-frame hives than can be brought about in any other way. How many farmers would be asked by their smart boys and girls who naturally

take to bees, 'Father, why can't we get some movable-frame hives, and do as well with them as neighbor A. does?'"

He says also: "To the class of bee-keepers I had reference to, the very first attempt to improve the old box or gum hive, by giving bees access to the supers, was a step backward, for in taking away the surplus honey, so-called, stored in these supers, often the honey absolutely needed to carry the bees through until the next harvest was taken away from them, and the colony unless fed perished."

In Gleanings for June 15, 1892, page 476, Langstroth is reported as saying: "That he questioned whether many farmers were advanced enough to have movable-frame hives, because with such hives they *would not handle the frames if they could.*

In Gleanings for July 1, 1893, Doolittle advises farmers to use the box-hive, and finishes his article in this manner: "Any farmer can do as much as I have here outlined, and I have sometimes seriously questioned whether this will not give *any of us* as good results as the more frequent manipulation of each hive, which has been insisted upon in the past."

In Gleanings for July 15, 1891, Mr. C. J. H. Gravenhorst, of Germany, says: "In the course of several years I also got more honey and wax in the old-fashioned way, with my old Lunebergien straw skeps than with my accurately constructed and skillfully handled Dzierzon and Berlepsch hives; and last, but not least, with undoubtedly less cost, labor and time." He says again: "Of course, my experience would have prompted me to abandon the frame hive totally had I been blind enough to misunderstand the great advantages of the latter." Again, he says: "Experience soon convinced me that the principal point was that I could handle my old skeps instead of individual frames, and get a thousand pounds of honey with less labor."

In Gleanings for April 15, 1891, P. H. Elwood says: "Quinby observed that bees did not winter well in the frame hive; and Dzierzon also observed that the open frame infringed upon the welfare of the bees."

Mr. Abbott, late editor of the British Bee Journal, says that it is unnatural to have the open spaces at the end of the frames. The Langstroth hive has revolutionized bee-keeping, and we have made discoveries into the wonders of bee-life that could not have been made with the old-fashioned hive. Bee-keeping has been specialized, for only a few individuals are fit to become expert bee-keepers; at the same time, farmers, as a class, have discontinued to keep bees, because it did not pay them as well with the improved hives as it did when the gum or box hive only was in use. This is not as it should be. Bees ought to be on nearly every farm, and not aggregated in large quantities as is the case now, where it is not uncommon to find individuals owning hundreds of colonies in one or two apiaries.

We are now ready for another advance in bee-keeping, and one that will again place bees on every farm, and permit nearly any one to handle bees with success, and give the farmer a bee-hive that can be handled as the old straw-hive used to be. It will be a compromise between the old and the new; it will be handled as easily as the straw-hive, and at the same time retain all the advantages of the movable-frame hive, and permit interior examinations; a hive that will be cheap, as we cannot get the old prices for honey, and honey ought to be cheaper than it is, so as to be within the reach of all, poor as well as the rich.

If you care to know more about the hive of the future, I shall tell you what it is in my next. Brock, Nebr.

[Mr. Gabus, if you know of a better bee-hive for the future than we now have, of course we want you to tell us about it in your next. There are a few individuals who are afraid there will be an over-production of honey, but we are not among them. It will always be under-consumption, and if the almost doubling of the crop of extracted honey by the miserable glucose and syrup adulteration could be effectually stopped, there wouldn't begin to be enough genuine honey produced now to supply the demand. Certainly, farmers ought to produce honey—just as they do apples, potatoes, and other produce—for the city people as well as for their own use. The trouble is not in over-production, it's under-consumption and the abominable adulteration.—EDITORS.]

☞ "Stop my paper; times are too hard," says a reader. Certainly—and if you are going to burn the bridge on which you cross, you will find times much harder. Saving less than 10 cents a month is rather extravagant economy, if you believe a paper is worth anything at all.

Interesting Experiments in Heating Honey.

BY HON. R. L. TAYLOR,

Superintendent of the Michigan State Experiment Apiary.

Perhaps no fact is better known to the skilled bee-keepers than that honey is readily injured both in flavor and color by over-heating it, and yet for want of exact knowledge of the point at which heat begins to be detrimental, there is no question that qualities of honey are greatly reduced in value even by those who are well acquainted with the general truth of the fact referred to; of course, with those who keep but few bees, and are content to neglect the latest and best sources of information, and to accept the word of the bee-hunter and the voice of tradition as all-sufficient to direct in the management of the bees and their product, the danger is greatly augmented.

What is the highest degree of temperature to which honey may be subjected without receiving damage? It is not necessary to explain to bee-keepers how important this question is. Before the invention of the extractor, heat was an effective assistant in the operation of separating the honey from the wax, and in case of honey candied in the comb it was an indispensable assistant; and to those whose limited apiary and slender resources do not warrant the purchase of all the convenient appliances, the age of the extractor has not yet come. But the coming of the extractor has, in fact, rendered the question still more important, for it has to a degree revolutionized the business of bee-keeping by the ability it gives the apiarist to readily remove the honey from combs without at all injuring them for the use of the bees, so that they may be used over and over again for years; and the means thus secured of supplying the bees with ready-made receptacles for their honey, has rendered the extractor vastly popular; but with it has come the magnified inconvenience of handling large quantities of candied or granulated honey, which often can be done to advantage after securing its liquefaction by the use of heat.

I know of no thoroughly satisfactory way of accomplishing the process of liquefaction. Either the process is a long and nice one on account of the skill and care required to keep the temperature below the danger point, as when the honey is to be liquified in crocks, jars or other vessels in which it has already been stored; or else it must be placed in the melting-vessel after cutting it out of the one in which it has been stored—a slow and trying labor, if it has been allowed to become thoroughly solidified, in which case the use of a spade, or even of an ax, is necessary, in order to make any satisfactory impression upon it, and even then the same skill and care are required unless the melting-vessel is so constructed that the honey may run off as fast as it becomes liquified. I have invented a vessel to accomplish this, which is made as follows:

The outer vessel (for it is double) is an upright cylinder, as large as desired, and as the stove to be used will accommodate; made of tin, galvanized iron or copper; the inner one would better be of tin, two or three inches less in height, and four to six inches less in diameter, than the outer one. The inner one is to be fastened on metal supports about an inch above the bottom of the other, and so that the space between the two is equal on all sides. Both vessels are to be perforated for a spout to run from the bottom of the inner one out through the outer one, at a convenient distance to allow the passage of the honey, as it melts, to a receptacle to be provided for it at one side of the stove. The spout is, of course, to be soldered in place. It should be at least an inch in diameter, and provided with a guard over and at some little distance from the inner end, of very strong and somewhat open wire-cloth, or other equivalent, to prevent the passage of too much unliquified honey. The honey, as it emerges, must pass into a strainer of cheese-cloth or other material, to intercept grains of unmelted honey, which are to be returned to the melting-can. The outer and the inner can should each have a cover of its own. In operation, the space between the two is filled with water, through which the heat is conveyed to the granulated honey in the inner one. The spout should also be provided with a faucet or other convenient cut-off at the outer end.

The most obvious way of effecting the liquefaction of honey is to put it into an earthen or other fire-proof vessel directly upon the stove. This course would make the honey liquid as quickly as any, but the effect upon the honey would be disastrous. As candied honey is a poor conductor of heat, that lying at the bottom of the vessel would become boiling-hot, or even scorched, before that two inches higher up in the vessel had become warm, if the fire were brisk, and the whole in a short time would be entirely ruined.

The next method that would be likely to occur to one, would be to raise the vessel some little distance from the stove by means of brick. This would render the process much

slower, and in a corresponding degree safer, but would still be almost sure to do the honey more or less injury, and would prove to be, on the whole, quite unsatisfactory.

The next plan, and in the absence of any utensil made specially for the purpose, the best of all is placing the vessel, containing the honey, in a bath of water, which is to serve as a medium for conveying the heat of the fire to the honey. In this place the heat is equalized and mollified, so to speak, and is under much better control, and yet, as will be seen later, all danger is not thereby eliminated. An improvement on this method could be made by so constructing the vessel which is to contain the honey, that it may be from time to time conveniently lifted out, and such portion of the honey as is sufficiently melted poured or drawn off.

The results of an experiment which I recently made is the best answer I can give to the question of what degree of temperature honey will endure without injury. For the making of the experiment I used a tin can about 20 inches in diameter. This, containing a few inches of water, was put on the stove, and an ordinary crock to contain the honey was set into the water, but raised about an inch from the bottom of the can by placing a few pieces of coal under it. The only honey at hand that would answer the purpose was some partially-filled sections of the crop of 1894. It was white and clean, gathered from basswood and clover, say two-thirds from the former to one-third from the latter, and was about half granulated. The combs were broken out of the sections and put into the crock till it was nearly filled. Fire was then put under, and the temperature of the honey gradually raised till it was at 145° Fahr., when a considerable portion of the honey had dissolved and separated from the comb, and the wax had begun to melt slightly. At this stage the liquified honey was drained off, and a sample of it secured. The heating process then continued to be applied gradually to the remainder till its temperature reached 165° Fahr., when both honey and wax were melted, and a sample of the honey was again taken after the removal of the wax. The temperature continued to be raised and the samples of the honey were taken at the temperatures of 185° Fahr., and 200° Fahr. I then essayed to raise the temperature still higher, but after a pretty strenuous effort I failed to get it more than two degrees higher. The honey was then removed and another sample taken. Thus five samples of the honey were secured at intervals of time amounting to one hour, or a little more, each.

The color and flavor of these samples are the means we have of determining the various effects of the different temperatures. In the first sample I could detect nothing either in color or flavor indicating the application of heat. Between this sample and the next one taken at 165°, the difference is slight. I could distinguish between them correctly by the taste, blindfolded, and by sight by holding them up side by side to the light. One person, used to the taste of honey, could distinguish them neither by sight nor taste. Another one thought the second one the better flavored. Practically, it would be safe to say, I think, that they would be classed as of the same quality.

After going above 165°, the honey rapidly deteriorates both in color and flavor. The difference between the second and third is twice as great as between the first and second; that between the third and fourth twice as great as that between the second and third; and that between the fourth and fifth shows even a more rapid rate of deterioration, though the temperature was raised but a trifle, showing that simply the continuance of an unwonted temperature causes injury. It is quite likely that the continuance of a temperature so low as 145° would prove injurious. The rate of deterioration in color corresponds well with that in flavor. The third sample would still be classed as white honey, while the fourth is quite light amber, and the last just a good amber.

In the absence of evidence that honeys from different sources can safely endure different degrees of temperature, we may assume that honey should not be subjected to a temperature above 165°, and at a temperature so high as that for only the shortest possible time.—Review.

Lapeer, Mich., Dec. 19, 1895.

CONDUCTED BY

DR. C. C. MILLER, MARENGO, ILL.

[Questions may be mailed to the Bee Journal, or to Dr. Miller direct.]

Amount of Honey Certain Plants Yield—Kegs for Honey.

1. Please give some estimate of the amount of honey each of the following plants will secrete per acre in a fair season; also how much per colony would be a fair yield under favorable conditions: Red raspberry, black raspberry, white clover, Alsike clover, basswood, and buckwheat.

2. Are whisky, wine and brandy kegs suitable to use for honey? E. M. H.

Kilbourn, Wis.

ANSWERS.—1. I don't know. Neither do I know where the woman lives that can direct you to the man that does know. The only thing I've ever had bordering on anything like a well-defined opinion in the case is with regard to buckwheat. I've always held that an acre of buckwheat would yield 25 pounds of honey in a day, just because M. Quinby said so, but I have serious doubts whether it was anything more than a guess with him. The fact is, that there's an unexplored field right here, and a chance for some one to distinguish himself by giving answers to your questions with proofs attached thereto. If a man should say an acre of raspberries yielded less than 50 pounds in a season, and another should say it yielded more than 5,000 pounds, it might be a hard matter to convict either one of perjury.

I suppose something might be learned in some cases where a given acreage of a certain plant was in reach, and nothing else in bloom at the time; and if any of the readers of the "Old Reliable" have any definite data to form an opinion upon, whether about the plants here mentioned, or any other, let them not be backward about coming forward to inform us.

2. I don't remember seeing them recommended, and I think I have seen them condemned.

Building Comb When Fed on Sugar Syrup—Swarm Settling on an Evergreen Tree.

These questions have been asked in the American Bee Journal:

Can, or will, bees build comb when fed on syrup?

Will a swarm settle on an evergreen tree?

I had a swarm to issue July 29, 1895, which has answered the above questions conclusively. The swarm settled first on an apple tree; I put them into a hive, where they remained half an hour, when they came out, and after circling about the yard, settled the second time on an arbor vine. I noticed that the bees were excited and confused. After some investigation I discovered that there were a number of young queens in the cluster, which I concluded were the homeless ones flying about the apiary at the time. I caged one of the queens, and then tried to hive them, but in a short time they were again on the wing. They finally settled the third time on a balsam fir; the limb on which they had clustered bent almost to the ground, which enabled me to cage three more queens, after which the bees went quietly into the hive.

The following two days were too cool and stormy for the bees to fly out, from which they suffered no loss, as everything in the line of bee-pasturage was dried up by the long-continued drought.

Not wishing to lose the bees by starvation, I put on a super, into which I placed a large steak-dish with some little floats in it. I poured, every morning, about a quart or more of syrup into this dish, which had been made of an inferior grade of brown sugar and water, about equal parts.

On the fourth or fifth day I looked into the hive to see what the bees were were doing with all the syrup. I found five frames drawn out and partly filled, and capped very white; but, to my surprise, I found no queen or eggs. About six days later I again examined the hive and found all the

frames drawn out, but no signs of a queen. About this time I had received some queens, and put one of them into this hive. Some time in September I again examined them, and found a thriving colony of yellow bees, the whole weighing 67½ pounds—about 35 pounds of brood, bees, and honey. To-day —Nov. 16, 1895—it appears to be a strong, healthy colony, in excellent condition. If the same can be said of this colony next spring, the fact may be worth reporting. B. J. C.

Notre Dame, Ind.

ANSWER.—Bees clustering on an evergreen is nothing unusual, but it isn't so certain that bees can make wax from sugar syrup alone. The fact that comb was built in an empty hive by a swarm at a time when bees were apparently gathering nothing is hardly conclusive, for bees are not likely to swarm unless there is at least a little something to be had from the fields in the way of pollen and honey. Experiments have been made that show that sugar syrup can take the place of honey, more wax really coming from a pound of sugar than from a pound of honey, brown sugar excelling white, but pollen is also needed—at least Cheshire says that it is terribly exhausting for bees to be obliged to secrete wax without pollen.

Dried Cattle-Dung as Smoker Fuel.

I have tried linen rags, shavings, rotten wood, rotten sacking, and all sorts of things, but I find nothing nearly comes up to dried cattle-dung. It smoulders slowly and surely, one charge lasting three or four times as long as any of the first-named, while the odor is most powerful and effective. Try it; you'll like it. S. D.

ANSWER.—Although very old, this sort of smoker-fuel may be new to many, and has the advantage that it may be more easily obtainable in some places than other material.

A "Crooked Commission-Man" Experience.

What do you think of a commission man that will send out his flaming circulars to bee-keepers, stating that he is in a position to get the very top figure for honey, will sell for 5 per cent. commission, has a call for more than he can get, quotes you prices of 16 and 17 cents for white honey, and after three months reports to you sold at 8 cents, then charges drayage at the rate of $2.70 per load for delivering the same, and 10 per cent. commission on top of that, and tells you that your snow-white basswood and clover honey was dark? If I had the power, I would prevent such men from ever receiving another pound of honey. E. A. M.

Chippewa Falls, Wis.

ANSWER.—I don't know for certain just what I'd think, for I never was in exactly that position, but I'll tell you what I think I'd think, and that is, that a man who would do the things you mention would not be a safe man to sit up with a corpse if the eyes of the departed were held shut with copper cents. And I am not in sympathy with the idea that we must keep so terribly silent about any one who is crooked in his business transactions.

I wish some one would tell us whether any commission house in Chicago regularly charges 10 per cent. commission. I have an impression that it's something entirely new, if it is done.

But please don't come down so hard on the whole fraternity of commission men. While there may be scoundrels among them, there are also those for whom I have high respect as honest men. If you should hear of me abusing my wife, that wouldn't justify you in saying all bee-keepers were brutes.

Comb Honey or Extracted—Which?

Would you advise a beginner in bee-keeping to produce comb honey, or extracted? H. F. M.

McFall, Mo.

ANSWER.—That question can't be answered by a single word without knowing about circumstances and surroundings. If the question means which will be easier for a beginner to manage, an apiary run for comb or extracted honey, I should say extracted. And on the face of it I should take your question to mean that. If one with little or no experience works for comb honey, there are a good many things about the business in which he could make mistakes that could not well be made with extracted honey. For example, we could so manage as to have at the close of the season a lot of unfinished and unmarketable sections, with none in good shape for market. Simply as a result of tiering up too much. If the same thing were done with extracted honey the same loss would not occur, for even if the honey were scattered through a lot of combs instead of having a smaller number of combs well packed, the honey could still be extracted all right. If the sections were not taken off early enough they would become darkened, and on that account less valuable; but the same thing would only make extracted honey better.

But the question may have a wider scope. Suppose it comes in this shape: I am about to commence producing honey to make all I can out of it in the next five or ten years; do you advise comb or extracted? The proper answer would be, That depends. If extracted honey will bring in your market just as much per pound as comb, then by all means work for extracted. In some places the honey is so dark that it will bring only a low price as comb honey, and you may make more money by running for extracted. It may be that your home market is so poor that you want to ship, and shipping facilities may be such that you cannot safely ship comb. These and other considerations must be taken into account. On the other hand, your honey may be all light, and it may be that you can get two or three times as much for comb as extracted, throwing the balance in favor of comb. Your own skill and experience in the matter may have something to do with it. A may exceed B in working on the same ground for extracted honey, while B may be ahead on comb.

Possibly it may be so difficult to properly determine the matter that the best way will be to commence working for both.

Increase by Dividing or by Natural Swarming.

I wish to increase my colonies in the spring. Would you advise natural swarming, or would I better divide? If you advise dividing please tell me just how to do it. My bees are hybrids, and good enough for me. I use the 8-frame hive.

South Avon, N. Y. M. D.

ANSWER.—It's hard to tell what would be best without knowing how far you have gone in your education as a bee-keeper. Some of those who are thoroughly versed in matters apicultural prefer natural swarming, while others prefer to take the matter in their own hands. Something depends upon circumstances, as whether a man expects to be on hand to see swarms when they issue.

But, from part of your question, I suppose you are something of a novice, and very likely your safer plan will be to let the bees swarm naturally. But as you intend to increase, the probability is that you intend to go into the business more fully, and it would be a fine thing for you to inform yourself during the winter by getting a good text-book and reading up. Then you will better judge for yourself as to what is best for you; and after becoming familiar with what is given in the books about dividing, it will be a safe thing for you to undertake it if you think that the best way in your case. But for one with little knowledge of the general principles of bee-keeping, to make artificial colonies would not be the safest thing, as it is an easy matter to do some little thing wrong and thus spoil the whole job.

Bridal Trips of Virgin Queens.

Virgin queens will not take their bridal excursion so long as unsealed brood is present, says Gravenhorst—he has known of only a single exception. I have known of *thousands* of exceptions. My queen-rearing nuclei are *never* without unsealed brood, yet the queens mate all right. Of course, in natural swarming there is no unsealed brood in the hive at the time the young queen mates, but I doubt if its presence would have any effect in deterring her.—Review Editorial.

Control of Swarming.

To control swarming we must remove one of the *prime* factors. Brood is the only factor we can remove and not defeat our object—honey. The removal of brood instead of decreasing the honey-yield rather increases it. We may remove the brood by direct confiscation, or we can do it more gradually by the removal of the queen. The first method would be better where the flow is very short and profuse, the second better where the flow lasts 40 to 60 or more days. The *cause* of swarming is instinct; its *control*, broodlessness. Other methods at times seem effective, but the only method of controlling swarming that is at all times a success, is broodlessness.—R. C. AIKIN, in Review.

Superseding Queens.

A queen should be allowed to remain as mother of a colony as long as she retains her fecundity; for prolificness, not age, should be the test in this matter. I never supersede a nice queen, no matter how old, until she shows signs of failing powers. We want queens for the eggs they lay; and for that reason, power of production, and not age, is the rule to follow. I would not keep even a *young* queen, if she did not lay up to a fair average, for there are a few queens that are not prolific enough to keep four frames supplied with brood as they ought to be; and where I find such, I always give their colonies something better to take their place. However, such queens as this last are the exception and not the rule; for the bees do not often allow such queens to remain in the hive long, especially if they are of the Italian variety.

After experimenting in the direction of superseding queens for years, I now decidedly prefer to leave it to the bees to decide when their queens are worn out, unless, by outside observations, I believe they are holding on to some unprolific young queen. As a general thing, the bees will make fewer mistakes in directing this delicate matter than the wisest apiarist is likely to make. I have had queens that were five years old do good duty till the commencement of their sixth year, when the bees would supersede them that autumn, the same as they often do in the autumn with queens commencing on their second, third, or fourth year.—G. M. Doolittle, in Gleanings.

Non-Swarmers Not Wanted.

We do not think we want any non-swarming bees, and it is our opinion that when the swarming propensities are bred out, the keeper of such bees had as well have no pocketbook, if he depends on his non-swarming bees.—Southland Queen.

Fire in Bee-Cellars.

Two in the symposium keep fire in the cellar. I suspect that's a larger proportion than will be found generally among those who cellar their bees. Of those who have tried it and abandoned it, it might not be out of place to inquire whether there may not have been a wrong use of a right thing. Mr. Boardman says it grows in favor with him. I'm not sure whether it does with me, but I'm sure the conviction grows that it is all right. If a cellar stands too near the freezing-point, you can bring the temperature up by making the cellar closer; but you'll have better ventilation and air by bringing up the temperature with a fire. We make fire for folks in winter, and no harm comes of it. Why not for the bees? The fire is put in an adjoining room, not in the same room with the bees. Just why, I don't know. Perhaps the fire is made with wood, in which case there might be too sudden a change of temperature, and the light from the burning wood might be mischievous. For my own use I would no more think of putting the fire in an adjoining room than I would a stove for heating a sitting-room. But I use anthracite coal altogether. A small cylinder stove keeps a steady, low fire, and the door of the stove is left wide open all the time. That helps ventilation. I think some fear that bees would fly into the open door, but I never knew a single bee to do so. The fire is kept going day and night all winter long, unless a spell of weather comes that makes the cellar too warm. I may mention that those colonies that stand nearest the stove winter as well as any.—DR. MILLER, in Gleanings.

The Laying of a Queen.

A queen can lay 3,000 eggs a day, but not every day. Here are observations on a colony of bees I followed in Palestine, January to December, 1891. As nearly as I could make out, the colony numbered some 10,000 bees, Jan. 1.

	Daily average.	Total.
Average laying from Jan. 1 to 20, '91	100	2,000
Spring waking-up, Jan. 20 to Feb. 7	666	11,988
Almond flowers, Feb. 7 to March 3	700	16,800
Beginning of orange blossoms, Mar. 3 to 18	2,333	34,995
Full orange blossoms, Mar. 18 to Apr. 10	2,600	57,200
Beg'n'g of no flowers, then cactus, Apr. 10 to May 21	1,000	40,000
Chaste-tree blossoms, May 21 to June 17	2,111	56,997
Chaste-tree, then thyme, June 17 to July 10	2,277	50,094
Thyme and end of it, July 10 to Aug. 3	1,250	30,000
Thistles, Aug. 3 to 29	460	10,960
Honey in the hive, Aug. 29 to Sept. 13	200	4,000
Peppermint and others, Sept. 13 to Oct. 14	115	3,000
Nothing outside, Oct. 14 to Nov. 11	35	1,000
Nothing outside, Nov. 11 to Dec. 10	28	1,000
Nothing outside, Dec. 10 to 31	0	
Grand total		320,034

About the same at the end of the season as regards the number—20,000 bees. At all events, this gives us an average of 76 eggs a day for 365 days, or 1,760 eggs a day if we take the honey-flow season from March 3 to August 3. The colony did not swarm, and at the end of the season it was reduced to very nearly what it was in the beginning; 300,000 bees were hatched, and passed away; the colony had produced nearly 180 pounds of honey. This honey was taken by the extractor, April 10; April 18, orange-blossom honey; June 13 to 19, chaste-tree honey; July 10 to Aug. 3, thyme honey.—PH. J. BALDENSPERGER, in Gleanings.

Place of Next North American.

The North American Bee-Keepers' Association agreed to come to Lincoln next year, and now some are kicking for fear they cannot get railroad rates to suit. There are no Nebraska men on the board of managers this year, and so we will have no say as to the time of meeting; but if they will listen to echoes from this end of the line, they can fix a time when low rates are given. This year (1895) those attending the meeting at Toronto paid full fare both ways, while at the same time anyone between the Missouri river and Chicago could have reached here for one fare plus $2.00, for the round trip, and from Chicago to the Atlantic ocean it would have cost one fare plus $4.00 for the round trip. Whenever you go east again, better buy return-trip ticket first.

Gentlemen, don't talk about holding the meeting in connection with the G. A. R. encampment until after next year, but come and see how well we can use you. Excursions to Nebraska have been run by the railroads each year for several years past, during the fall months from Eastern points, and we have reason to hope that they will not be discontinued next year. We still have elbow room for several good farmers, and the railroads want to have them come and see this land of ours.—Nebraska Bee-Keeper.

Market for California Honey.

It was figured out during the convention, that extracted honey, on an average, for a series of years, costs 4½ cents to produce, and that the average crop is 65 pounds. As the present price of honey is from 3 to 4 cents, it is evident the bee-keeper is getting next to nothing for his labor.

The present slipshod method of marketing honey is largely to blame for the low prices.

The citrus fruit men are so well organized that they can estimate several months in advance the probable number of carloads of fruit there will be to ship. The honey-producer has never yet been able to tell how much honey has been produced, even months after its disposal.—J. H. MARTIN, of Calif., in Gleanings.

OLDEST BEE PAPER IN AMERICA — THE AMERICAN BEE JOURNAL — ESTABLISHED IN 1861

PUBLISHED WEEKLY BY
GEORGE W. YORK & COMPANY,
Editors and Proprietors,
56 Fifth Avenue, - *CHICAGO, ILL.*

REGULAR CONTRIBUTORS:

G. M. Doolittle, of New York. Prof. A. J. Cook, of California.
Dr. C. C. Miller, of Illinois. Dr. J. P. H. Brown, of Georgia.
J. H. Martin, of California. Rev. E. T. Abbott, of Missouri.
Chas. Dadant & Son, of Illinois.

$1.00 a Year—Sample Copy Sent Free.

[Entered at the Post-Office at Chicago as Second-Class Mail-Matter.]

Vol. XXXVI. CHICAGO, ILL., JAN. 16, 1896. No. 3.

EDITORIAL COMMENT

Hon. R. L. Taylor, of the Michigan Experiment Apiary (whose interesting article appears in this issue), will talk on bees at eight Farmers' Institutes in Michigan, at the following places:

Bad Axe, Jan. 22; Sanilac Centre, Jan. 23; Port Huron, Jan. 24; Lapeer (his home), Jan. 25; Grand Blanc, Jan. 27; Corunna, Jan. 28; Alma, Jan. 29; and at Mt. Pleasant, Jan. 30.

Every bee-keeper living in the localities mentioned should, if at all possible, arrange to attend those meetings, for Mr. Taylor is a practical bee-keeper, and undoubtedly will give the best he has in his bee-talks.

Large Yields of Honey, as given in the Question-Box department this week will be very entertaining reading. It shows what bee-culture has been in the past, and although it may never again come up to "ye olden time," still it no doubt will again rise to the dignity of a fairly remunerative industry. Very often crops on the farm do not pay, yet who would stop farming because a few unfavorable seasons come in succession? If publishers of bee-papers were to stop when their papers failed to prove profitable investments, where would be any of our bee-papers in a short time? There is not a publisher of a bee-paper to-day who is making any money on his paper alone! And yet, would you have them quit publishing them? Oh, no! we must all hold on, and labor on, trusting that the great Future may have some sort of reward for those who are faithful to their posts of duty.

The Chicago Meeting of the Illinois State Bee-Keepers' Association was held last Thursday and Friday, there being present between 30 and 50 apiarists.

Just as we predicted, it was a very interesting and helpful meeting. There was no previously-arranged program, and none was needed. Beginning with the very first session, the time was well occupied. There wasn't a single lag. Essays of any kind would have been almost useless. It was one continuous box of apiarian interrogation points, in the discussion of which nearly every one present took some part. If conventions were always certain of having good presiding officers, we would say that essays are always unnecessary at such gatherings. But nearly all depends upon the president. If we were sure Dr. Miller wouldn't see this, we'd say right out that he is a model presiding officer. He certainly was, at this Chicago convention.

Editor E. R. Root, of Gleanings, was chosen Secretary, *pro tem*, in the absence of the regular Secretary, Jas. A. Stone, who unfortunately was compelled to be in bed on account of sickness. We expect to begin Mr. Root's report of the meeting very soon. We think it will be an unusually good one, as we noticed he worked like a "nailer" all the time—which included meal-time as well. (We might say, as some know, Mr. Root is on a wholly meat diet, and at one meal we positively saw the waiter bring him a whole porter-house steak—about 4 pounds. Only the harder bones remained when he left the table. But he didn't eat quite all of it alone. The next day it was noticed in the Chicago newspapers that the price of the best beef had advanced considerably in price! Of course, our fellow-editor received the credit—or blame—for this. He took them—the credit or blame, and the meat—in his usual quiet and modest manner.)

Several ladies favored the meeting with their presence, among them being Mrs. N. L. Stow, of Evanston, Ill., who has 55 colonies, and had, in 1895, about 1,200 pounds of mostly comb honey from 37 colonies, spring count; Mrs. Poindexter, who, a few years ago, had 200 colonies in DeWitt county, Ill., and one year produced 12,000 pounds of honey; and Miss Mathilda Candler, of Wisconsin, who, from some 80 colonies produced between 4,000 and 5,000 pounds of honey in 1895.

The convention was held in the comfortable parlor-like club-room of the New Briggs House, which was probably the nicest place in which a Chicago bee-convention ever was held. This hotel is a first-class one, and did all they could to make the stay of the bee-keepers pleasant.

Many of those who have been familiar figures in previous Chicago bee-keepers' conventions were this time very conspicuous on account of their absence; among them might be named, W. Z. Hutchinson, H. D. Cutting, Hon. Geo. E. Hilton, C. P. Dadant, Dr. A. B. Mason, and Hon. Eugene Secor.

We will not attempt to speak further of the meeting at this time, only to say that we believe, after reading the report of the proceedings, all those within 200 or 300 miles of Chicago will wish they had been present.

C. R. Horrie & Co., of Chicago, have been getting quite a good deal of free advertising lately—but of such a nature that we think it will hardly tend to increase their business very much. Gleanings for Jan. 1 refers to our recent explanation concerning them, and adds: "Complaints have also come in to us, and, for the present at least, we must caution bee-keepers against sending them honey."

Several of our readers have insinuated lately, in private letters, that we had "opened our books" to Horrie & Co., furnished them our list of bee-keepers' names, etc. Such suggestions are utterly false. We have never given or sold to any commission firm, or any one else, any of the names of bee-keepers in our office.

Editor Hutchinson, in the Bee-Keepers' Review for October, when giving the firm in question a very complimentary notice, said: "They bought my entire list of names of bee-keepers in the United States, and sent out circulars soliciting consignments." But that is nothing against Mr. Hutchinson, for Horrie & Co. could easily have gotten those names through a third person. But we question the advisability of offering special lists of names publicly. Still, that is a matter for each list-holder to determine.

But what has surprised us most is this: That any intelligent bee-keeper should permit himself to be induced

to ship his honey to a *new* firm that claim to be able to get *so much* higher prices than those quoted by old honey firms almost the next door to them. Surely, any one could easily have compared the prices quoted in the mailed circulars with those published in the bee-papers, when it would have been seen at once that something was wrong.

It pays to watch the market quotations of old and reliable firms, and not accept the "say so" of some who have not learned the A B C of the business.

Buying Bee-Supplies.—The time will soon be at hand when bee-keepers will think of preparing for another season. What supplies to get, and where to buy them, will have to be decided. Now we believe that all who offer bee-supplies in the advertising columns of the American Bee Journal are entirely reliable—that they will in each and every instance give "value received." So, when you get ready, just send for their catalogues, and when doing so, *be sure* to say you saw their advertisements in the Bee Journal.

The American Bee Journal, its editors nor its publishers have any bee-supplies to sell, and we advise all to patronize those who are the nearest to you, as you will thus save freight or express charges—provided, of course, you get just as good satisfaction. We believe in square and honorable dealing—going where you can get the most of the best for your money.

Bee-Farms in Servia.—It is reported that a new industrial departure of great interest has been taken in Servia, where a society for bee and fruit culture has been established. This society seeks to introduce a system of bee-keeping on scientific principles, and of developing the industry on a profitable basis throughout that country, where until lately the peasants have been in the habit of keeping their bees in conical straw-skeps daubed with mud or plaster, and destroying the bees to obtain the honey. It is probable that the society will provide the peasants with cheap straw-skeps with supers, as well as bar-framed hives and other desirable agricultural appliances. The farm of the society contains about 200 hives, placed in regular rows over the ground, six feet six inches from each other, facing north. These hives are all on the bar-frame principle, and of the pattern generally known as Dzierzon hives, and they contain about 80 pounds of honey in the comb when full. They are made of wood, with straw sides, and cost about $2.25 each. The bees appear to be a species of the common bee (*Apis mellifica*), but are rather small in size and unusually tractable. The Italian bee (*Apis ligustica*) does not succeed well in Servia, becoming quickly merged into the indigenous stock.

The bee-farm is provided with two centrifugal honey-extractors of very simple design, but perfectly practical. After extraction the honey is put into glass bottles, with neat screw tops, imported from Austria, containing respectively half-pound, one pound, and two pounds. The price of the honey is about 17 cents a pound, exclusive of the bottle, for which an extra charge is made. The wax is sold to the wax dealers for making into church candles, and realizes about 30 cents a pound.

The importance of encouraging bee-culture is evidently realized by the members of this society and others interested, and the introduction of a law is in contemplation obliging all priests, schoolmasters, and certain others holding employment under the government to turn their attention to the keeping of bees.

☞ With a favorable location and a natural ability and inclination for the business, there is no question but bee-keeping is one of the most profitable pursuits in this great State of ours, so noted for its many and profitable industries.—Hon. Geo. E. Hilton, of Michigan.

BIOGRAPHICAL

MR. ADRIAN GETAZ.

The subject of this sketch was born in Aigle, Canton de Vaud, Switzerland, on April 28, 1844. His father went to France when Adrian was only 3 years old; he was a preacher, in the employ of the Evangelical church of Geneva and Lyons. He preached in several parts of France to congregations of protestants, scattered among the Catholic population. His work was more of a missionary than a regular pastor.

In 1853, soon after Napoleon III ascended the throne, an order founded on a constitutional technicality was issued, ordering all the small protestant churches not under the state supervision to be closed. This was done in order to please the Catholic priests' party that was very strong at that time. Mr. Getaz and three other pastors refused to discontinue preaching, and were tried and condemned to heavy fines and imprisonment. After six weeks passed in jail, they were pardoned and released.

In 1859 the senior Getaz took charge of the estates of a large landowner, beside continuing preaching to a small congregation of protestants. He became a prominent agriculturist, and won many medals at the fairs. He instructed and taught his children himself, not only in classical things, but also along practical lines, such as bookkeeping, surveying, civil-engineering, etc. Adrian was the oldest child. His father and mother are now dead, but the eight children are living—three boys and one girl this side of the Atlantic, and three girls and one boy still living in Europe.

Mr. Getaz followed the same business as his father, that is, agricultural manager for some landowner, and finally entered, in that capacity, in an industrial school. Soon after, the directors found out that he could do other work than that, and immediately assigned him a place as professor, and insisted that he should take a diploma at once, and push in that direction. He also had charge of the bakery department during a part of the time. But a change of directors brought out an entire change in the personel of the institution, and Mr. Getaz then went to Knoxville, Tenn., in 1870. He worked successfully at a sawmill, as a farm hand, in a broom-factory, in a shoe-factory, and finally bought a farm on which he lived several years. Farming did not prove very satisfactory; the land was poor, and what was worse, the panicky times of 1873, and the following years, caused farming products to sell there at prices ridiculously low. Being of a mechanical turn, he was his own blacksmith and wood-worker, and did a good deal of work of that kind for the neighbors. He also did work as carpenter, mason and well-digger—in fact, almost anything that came along, including teaching music and school, and firing a threshing-machine engine.

Mr. Getaz finally went back to Knoxville, and worked with Stephenson, Getaz & Co., as bookkeeper, paymaster, lumber inspector and draughtsman; later as bookkeeper and cashier of the Knoxville Mantel and Cabinet Co., of which he was a stockholder; now as bookkeeper for his brother, D. Getaz, who is a builder and contractor.

Mr. Getaz says: "Very few bee-keepers have done as many different kinds of work as I have, excepting, perhaps, Mr. Heddon, who, I understand, among other things, has been a dancing-master and Sunday-school superintendent. I have always wondered if the two were at the same time."

Mr. Getaz does not remember what year he began bee-keeping, but it was about eight years ago when he began with four colonies. A few nuclei bought later were a failure, on account of robbing. He keeps now between 50 and 60 colonies, in two apiaries—one about 3 miles from the city, and the other 9 miles away. The results, or profits, of his bee-keeping are not very brilliant, though his average yield per colony has never been as low as Dr. Miller's was last year. Bees have been only a side-issue with him, and sometimes woefully neglected, when other work was pressing. Another reason is, that he has been experimenting and learning, rather than working for profit. A third reason is the presence of bee-paralysis. He does not think that bee-keeping will ever be

profitable where he is until they get entirely rid of that disease.

Mr. Getaz was converted in 1876, while living on the farm, after a very earnest revival meeting. He joined the Southern Presbyterian church, and since that time he has taken an active part in Sunday-school work, sometimes as teacher, twice as superintendent, and is now assistant superintendent. He has had charge of the singing for several years, and has been organist and chorister the balance of the time. He is also a member and officer of a Christian Endeavor society. THE EDITORS.

Southern Department

CONDUCTED BY

DR. J. P. H. BROWN, AUGUSTA, GA.

[Please send all questions relating to bee-keeping in the South direct to Dr. Brown, and he will answer in this department.—EDS.]

Report of the International Bee-Keepers' Congress at Atlanta, Ga., Dec. 4 and 5, 1895.

(Continued from page 26.)

AFTERNOON SESSION, DEC. 5.

First was the following essay by J. D. Fooshe, of South Carolina, on

Bee-Keeping a Profitable Industry.

The question is often asked, "Will it pay to keep bees?" I answer, "Conditionally."

To the wide-awake, energetic, practical bee-keeper, it will pay as an industry alone, but I prefer to treat the subject as connected with other industries, and especially with farming.

It will not pay those who build air-castles with great piles of honey, and give no attention to their bees. Like all other industries the money comes according to interest manifested.

There are those in all departments of business who do not succeed for want of attention.

Farming will pay, but it will pay better if a poultry yard or an apiary is connected with it, or even both may be connected with it, and both made to yield a handsome profit.

I am one that believes in diversifying our interests so that if we fail in one, another will succeed. I would not advise keeping bees as a livelihood, because, like all other enterprises, it sometimes fails even with the most practical and experienced bee-keeper; but on the other hand, if we have something to fall back on, we would not feel so entirely "broken up" if our bees gave no profit. A little attention at the right time will invariably insure success. Honey alone is not the only source of profit to be derived from the apiary.

We now have queen-rearing reduced to scientific principles, and perhaps an apiary run for queens alone will pay better than one run for honey alone. If you will pardon a personal allusion, I have derived more profit from the sale of bees and queens than I ever did from honey. Queens are now permitted to go by mail, not only through the United States and Canada, but to foreign countries also. Bees are also shipped successfully in any quantities long distances by express; but all are not expert at queen-rearing and shipping bees. Some, therefore, will have to derive profit from honey and wax.

I would advise all who keep bees, even for honey alone, to procure modern hives and fixtures.

Section honey is so much more attractive and nice to eat than the honey that is taken from the old-fashioned box-hives, filled with pollen, that there is no comparison; and so with extracted honey in comparison with what is termed "strained honey" flavored with pollen.

The practical, wide-awake bee-keeper should know his locality, and should be acquainted with every source of honey. I will mention some of the flowers that yield honey. The first with us here in the South is tag-alder and maple—these are only pollen-plants, and answer a good purpose for building up a colony by stimulating the queen. Next is fruit-bloom, and, if honey is gathered from it, it usually excites swarming. The apple-bloom produces in favorable seasons more nectar than other kinds of fruit-bloom. Willow blooms a little before apple, and is also a fine honey-plant. In some localities white clover thrives and gives good forage for bees, but it does not thrive in the South as in the North.

Poplar and blackberry come next, and where poplar abounds bees are sure to do well while it is in bloom. Persimmon is also a fine honey-plant, but honey sometimes granulates that is gathered from it. During the bloom of willow, apple and poplar, bees usually swarm, but should be prevented from sending out more than one swarm to the colony.

After swarming-time we usually have a dearth of honey begins, say the latter part of June, and continues until cotton blooms profusely, from which source bees gather a nice grade of honey. After cotton, field-peas, and last, but not least, in October the golden-rod and asters are in full bloom, and our bees gather more honey and a better quality than from any other source. From these they gather their winter stores, and usually crowd the queen out from laying by filling all the cells with honey.

I have been astonished time and again that in view of the many sources we have for honey, that we, of the South, let it go to waste.

Our Northern friends are confronted with more difficulties than we are; for while they are puzzled over the winter problem, we rest serenely, and leave all our bees to care for themselves on the summer stands. Their season is much shorter than ours, and their winters more severe, yet it seems to me that they are more successful with bees than we are. There are more people in the North who keep bees than in the South, and why they succeed so much better than we of the South I cannot tell, unless on account of the attention they have to give their bees, and the outlay necessary to carry their bees through the winter, causes them to appreciate them more; for that which costs no trouble, time or outlay, seldom yields much profit.

Until recently there was hardly a bee-journal published in the South, but there are many published in the North. I often ask, Why this difference? I know that these facts exist, but cannot tell why, for certainly we have largely the advantage, both in climate and season.

There is no profit from bees to those in the North or in the South who do not take an interest in and give proper attention at the right time. I believe that a barrel of honey can be secured at less cost than one can grow a barrel of syrup. A good colony of bees will often gather 50 pounds, or more, of honey in favorable seasons.

Bee-keeping does not require strength or much capital. Ladies are as capable of making bee-keeping profitable as men; and in many instances more so, and they are more apt to succeed on account of their carefulness in handling the bees. Nearly all the work required in an apiary can be done by a lady.

There is an idea that bees will not sting some people, but it is because some are not afraid of them, and are less nervous. Hybrids are usually crosser than pure Italians, but all that I ever had anything to do with would sting if angered, or misused, or treated roughly. Bees are not vindictive without a cause, but they are no respecters of persons. Sometimes they are more docile, and easier to handle, than at others, and especially when filled with sweets.

There are but few kinds of business that give any profit without toil and labor. We people of the South, and especially farmers, have grown cotton until we take little interest in anything else. Last year our great hobby failed us, especially in profit, so that we became very much discouraged, and began to cast about for a diversity in order that we would not be so dependent upon one thing. I would recommend bee-keeping as a source of profit, but not in the old-fashioned way of box-hives, etc. It costs but little to get a beginner's outfit, and it very rarely, if ever, interferes with farm work.

Many people have kept bees, but did not succeed on account of the moth-worm; but worms very rarely, if ever, destroy a colony of bees in a normal condition. A colony of bees with a defective queen, or no queen at all, will sooner or later succumb to the awful enemy unless helped by the apiarist. A colony of bees will no more thrive without a queen than plants will thrive without sunshine and moisture.

I would advise every person who keeps bees to subscribe for a good bee-journal, which will give light on the subject, and will pay many times the cost. No one now-a-days can succeed without being posted in his or her profession; and I do not know of anything that has made greater improvement than bee-keeping since the movable-frame hives were introduced by Mr. Langstroth.

I would not give the bright side of bee-keeping alone, and

only hold out the idea that there was profit all along, but, like all other industries, it has its discouragements. Sometimes bees fail to gather honey because, when the plant is in bloom, it is too cold or too wet, and in various ways discouragements and failures may come. But, upon the whole (and I judge from actual experience), there are no more failures in bee-keeping than in growing crops.

Some years, on account of drouth or wet, we fail to have corn, or cotton, or grain. So with bees; they are just as liable to fail to give profit, from a combination of causes, as our crops are.

I would advise beginners to start with one or two colonies, and increase as they learn to handle and profit by them. To be successful with bees one must love to work with and care for them, and by them they will find that a kind Providence has taught us many useful lessons. J. D. FOOSHE.

H. C. Simpson, of South Carolina, said he took 700 pounds of cotton-bloom honey from 30 colonies.

This was followed by a very interesting lecture by Frank Benton, on "Forage crops which are adapted to the South, and which are honey-producers." Mr. Benton divided the crops into five divisions in the order of their value as follows:

1st. Alfalfa (Medicago sativa).

2nd. Melilot or sweet clover (Melilotus alba).

3rd. Sainfoin (Onobrychis sativa).
Alsike clover (Trifolium hybridum).
White clover (Trifolium repens).
Sulla clover (Hedysarum coronarium).
Crimson, scarlet, or Italian clover (Trifolium incarnatum).

4th. Serradella or bird's-foot clover (Ornithopus sativa).
Cowpea (Vigna sinensis).
Japan or bush clover (Lespedeza striata).
Russian or hairy vitch (Vicia Villosa).

5th. Rabbit's foot clover (Trifolium arvense).
Saccaline or giant knotweed (Polygonum sachalinense).
Goase or furze (Ulex Europaeus).

[Continued next week.]

Question-Box.

In the multitude of counsellors there is safety.—Prov. 11-14.

The Largest Yields of Honey.

Mr. E. T. Flanagan has been whistling up his courage by gathering from a number of bee-keepers reports of their best yields, which he gives in the Progressive Bee-Keeper for January. These reports make very comforting reading.

He sent the following questions to a number of bee-keepers, who responded, as will be noticed:

1st. How large a yield of honey (comb or extracted) have you ever secured from one colony in one season?

2nd. What was the largest amount of honey you ever secured in one season, and the number of colonies and race of bees that gathered it?

The replies are as follows, beginning with Mr. Fanagan's answer:

E. T. Flanagan, Belleville, Ill.—At my home apiary, while I always get enough to keep the bees breeding well, I seldom have any surplus, and often have little enough to winter on. That is what has forced me to keep from three to five out-apiaries, the nearest not less than eight miles from home. At my out-apiaries I always have some surplus and plenty to winter on, and generally enough to help out the home apiary. Still, meagre as is the flow here at home, as a rule, I have on several occasions secured a fine lot of surplus, and the strangest part of it to me was the fact that the flowers did not appear to be more abundant than usual, but they were overflowing with nectar, and it is this fact that makes me so sanguine that good yields of honey may be looked for in the near future. There must be a change for the better, as it could hardly be worse. The largest yield of honey I ever had from one single apiary was from 35 colonies, spring count, increased to 70, and secured 5,500 pounds of comb honey, and 1,000 pounds of extracted. This is not an extraordinary yield by any means, but was very good for my locality, and could I do as well in proportion to the number of colonies, every year, I would be well satisfied.

Mr. Hammond, Malone, Iowa.—The largest amount of comb honey I ever

secured from one colony was 188 pounds in well-filled sections, and a lot of unfinished ones that were not counted. The bees were leather-colored Italians. The largest yield of extracted honey from one colony, that were given more starters of foundation in the super, and had to build their own comb, was 267 pounds. This honey was gathered from white clover. The average yield throughout the apiary was 120 pounds.

Mrs. L. C. Axtell, Roseville, Ill.—The season of 1882 we received 39,000 pounds of honey, mostly comb, in first-class sections, from 180 colonies, and increased to 295 colonies, being a little over 216⅔ pounds per colony. Our greatest yield from one colony (a good hybrid) was about 300 pounds. Of the 39,000 pounds only 500 was extracted. The honey netted us in Chicago 12½ cents per pound.

H. W. Funk, Bloomington, Ill.—I got in the year 1882, from 75 colonies, 15,593 pounds of honey. One-half or more was comb of the finest quality, and averaged 207 pounds per colony. It rained so much that there was not much honey from white clover gathered, but heart's-ease covered every field, as it was so wet that many fields were not planted to any crop. Since then nearly all the farms have been tilled, and heart's-ease and clover are both scarce, and the outlook not encouraging.

J. W. Bittenbender, Knoxville, Iowa.—The largest yield from one colony, spring count, was 208 pounds of comb honey. Extracted honey, 3,400 pounds from 45 colonies. Hybrid bees.

Frank Coverdale, Delmar, Iowa.—I really do not know what my best colony gathered, but my best yield was in 1886, 208 pounds to the colony, half extracted. Bees were blacks, hybrids, and Italians. The Eastern Iowa Bee-Keepers' Association showed an average, in 1889, of 212 pounds per colony, nearly all comb.

Chas. Dadant & Son, Hamilton, Ill.—The largest crop of honey we have ever harvested was harvested in 1889, if we remember right, from about 400 colonies of bees, mostly Italians, with some hybrids and a few blacks—45,000 pounds. We cannot give the largest amount harvested by one colony, for the reason that during our best seasons we were too busy to waste time weighing the crop of a part of the hives, and every time that we have started weighing the crop harvested by one single colony, some other colony managed to get far ahead of this. If the honey was all harvested at once, it would be but little trouble to weigh the best, but we have extracted as many as five times from one apiary in one season, and we believe that during that season some colonies yielded as much as 400 pounds, and perhaps more.

L. W. Baldwin, Independence, Mo.—I will say that the best report from one colony that I remember was 150 pounds of comb honey. The bees were pure Italians. The best crop I ever had was in 1886, when I took 12,000 pounds in one-pound sections from 150 colonies. It was nearly all from white clover, and was very fine. The bees were nearly all pure Italians. Myself and sons have now about 600 colonies in winter quarters.

James Heddon, Cass Co., Mich.—I am unable to answer further than to say that I once took 410 pounds of surplus from one colony not fussed with in any way. The hive had no movable frames at all; 362 pounds of the surplus was comb, and 48 was extracted honey. This was about 25 years ago, when we had fresh moisture at the roots of the basswood trees. From 48 colonies, that season, the yield was very large (see back number of the American Bee Journal). One year I began an out-apiary with 102 colonies; increased to 225. I kept no account of the number of pounds, but I did of the cash I received from it, and it was $1,070.00. It cost me less than $70 for labor. I once hived a full prime swarm, on 10 Langstroth frames, during a copious basswood flow. After three days I opened the brood-chamber (all there was to the hive) to see how the queen was laying. I found about 50 square inches of comb in the center of one frame, empty and shining, but not an egg in any cell. All the rest was solid with basswood honey, and partly sealed over. I threw all out clean, and got about 70 pounds of honey. Next day at precisely the same hour (10:30 a.m.) I opened the hive to see if my queen was then laying, and I found so much honey (all unsealed and ¾ ripe) that I threw it all out and weighed it. It tipped the scale-beam at 29 pounds and 13 ounces. This is my best record. One year I got $800 from 16 colonies, and increased to 33. I sold the honey (it was extracted) in glass jars, and it netted me 32 cents a pound. These were the days when Nature favored us. Bees paid then.

B. Taylor, Forestville, Minn.—The largest yield from a single colony in comb honey was 265 pounds of marketable honey. There were some unfinished sections that were not counted. The bees did not swarm, and were first-cross Italian hybrids. The best yield I ever had from a whole yard was 143 pounds per colony from 45 colonies, spring count. This was finished comb honey, and there was a quantity of unfinished that was not weighed. The bees were blacks, with a slight mixture of Italian, but mostly pure blacks. They were increased to 70 colonies.

G. M. Doolittle, Borodino, N. Y.—Largest yield of comb honey from one colony, 309 pounds. Largest yield of extracted honey from one colony in one season, 566 pounds. Largest crop in one season, 11,492 pounds, from 69 colonies; mostly comb; from choice Italian bees.

Dr. C. C. Miller, Marengo, Ill.—My largest yield was in 1882—16,549 pounds from 172 colonies, comb honey. I don't know the largest yield per colony, but never had anything extraordinary. I'm not in a good region, having nothing but clover for surplus.

Mrs. L. Harrison, Peoria, Ill.—The best yield from one colony was 200 pounds, Italian bees. Largest yield in one year, 5,000 pounds, mostly comb, from 80 colonies, spring count; increased to 120 colonies. Italian bees.

We should be glad to add to the foregoing replies, if any others will report their large yields in a very condensed form. We would like to have replies particularly from States not represented in the list given.

Mr. Flanagan, in closing his article, has these encouraging words to offer:

We can hardly conceive of circumstances under which extracted honey would bring 32 to 40 cents, and comb honey 50 cents per pound. Those days are gone forever, and the possibilities of realizing $800 from the product of 16 colonies in one season, as given by Mr. Heddon, is not for us; but that there will be good old-fashioned seasons again, for us of the Middle Western States, I have no more doubt than I have of my existence; and, as in other lines of business, when, owing to low prices, bad seasons, and gloomy outlook, so many are turning their attention to other things, now is the time to hold on. Give more attention than ever to every detail; see that all things are in the best possible order, and be ready to take advantage of the opportunities for success, as they present themselves.

General Items.

The Swarming Bees Ahead.

I noticed in the Bee Journal during the last year that a great many bee-keepers prefer non-swarming bess; that is, I suppose, bees that don't swarm. Now, my experience is just the opposite. In June, 1893, I purchased two colonies of Italian bees in the dovetail hives, from an Ohio bee-keeper. The colonies were the same throughout. One I kept, and a neighbor got the other. They were wintered on the summer stands, and when fruit-trees bloomed I gave my colony a set of 48 sections, so they should not swarm. My neighbor let his bees have their own way, and they swarmed May 26, and again June 3. Later on he gave each colony—now 3—a set of 24 sections, and by taking out a few boxes when full, and giving empty ones, he managed to get 80 pounds of honey and two swarms besides. I, by giving empty sections as fast as the first were filled, got 74 pounds of honey and no swarms. How is that for non-swarming bees? I can't see the point. If there is a point, I think it is in favor of swarming bees. PAUL WHITEBREAD.

Hobbie, Pa., Dec. 13, 1895.

Short Season and Short Crop.

The past season was a short one for the bees. The lack of snow last winter caused nearly all the white clover to kill out. Late frosts killed nearly all the fruit-bloom, and an off year with the basswood bloom, cut short the spring crop. There is lots of golden-rod here, but I have never seen my bees at work on it; the same in regard to strawberries. This is a timbered country, and bees get a large portion of their honey from that source. Buckwheat helped them out some, but there is but little sown in these parts. My bees beat all former records in the line of swarming, but not much surplus honey. I put the bees into the cellar Nov. 30, in good condition.

I was much interested in reading Query No. 996, giving a remedy for preventing bee-robbing, as a few nights before I had miscreants make a raid on my bee-yard, and opened 13 hives and carried off 16 frames of honey. They were not green hands, for the job was neatly done.

G. W. Demaree speaks of the freaks of bees. Here is one that has not come to his notice: In October I heard the bees buzzing and flying around a lilac bush. There was no bloom at the time. On close examination I found they had flown into the center of the bush, and cut off pieces of the leaves as large as their bodies, and some had more than they could get away with, and fell down in the grass. Now, what did they do with it? Can Dr. Miller give us any light on the subject?

I take pleasure in reading the Bee Journal all through. I am nearly 75 years old, and have plenty of leisure. R. HOWELL.

Gillett, Wis., Dec. 6, 1895.

Commission Men, Marketing, Etc.

In the Bee Journal of Nov. 28, I see the editor scores a Chicago commission house. It is precisely such men who have given commission men such a bad repute, that the whole Pacific Coast is afraid of them. It doesn't make much difference what we ship—if we let the property get into their hands, we are at their mercy, and get swindled three times out of four.

I long ago discovered that bees alone, in this part of the country, would not keep the "pot boiling," so I have added farming, fruit-raising, etc. I once shipped seven carloads—75 tons—of fresh grapes, as fine as ever left this Coast, having two cars sold in Minneapolis, and five in Chicago, in the regular fruit auction houses. Those grapes simply paid freight, and entailed a net loss to me of a little over $2,500.

Again, I have shipped many carloads of

raisins East, and I find invariably that if the market drops a little, the consignee will try to get out of fulfilling his agreement. So it is with our wine, oranges, lemons, etc., until, in desperation, we are obliged to form combines or unions, and sell only for cash at our stations. The wine producers and orange-growers have the strongest unions, and the result is our crops of that class are now selling for enough to pay cost of raising them. Previous to this, the more a man had to sell the worse he was off, and plenty of men were bankrupted.

Our California honey men are on the right track, and if the proper effort be made, we will have a union that will prevent a few commission men from gobbling the whole crop at their own price.

At this writing bees come in loaded with pollen and honey, and colonies are all very strong, and in fine condition, but we have not yet had rain enough to amount to anything, and unless we get a good one this month, we will have little honey next year.

Mr. J. M. Hambaugh, formerly of Illinois, has bought about 50 acres of land in this valley—1½ miles south of me—has built a barn, and will soon build a house, and be "one of us."

The editor seems to be on the right track to get at the market prices of honey. We look to the bee-papers to keep us informed as to the quantity produced generally over the country, and the prices in the different cities. These prices ought not to vary much, and if they do, we think there is something wrong. Out here we do not expect any more for our honey than Eastern men get for theirs of equal quality, but we think we ought to get as much, gross. Of course, we have more freight to pay, but we expect that. SOUTHERN CALIFORNIA.

Dec. 5, 1895.

First Year's Experience—Sweet Clover

Last spring I purchased six colonies of bees in box-hives. Later I got some 10-frame Improved Langstroth Simplicity hives. I now have 13 colonies in these hives, all in good condition for winter.

The last was a poor season for bees in this locality, as the bees did not work on white clover here. I harvested about 300 pounds of nice comb honey. I think I shall try sweet clover for my bees. Last spring I received a small package of sweet clover seed, which I sowed on April 16; it came up nicely, and reached a growth of about 3 feet. I think I shall grow it more extensively next spring. But here are questions for any one who feels disposed to answer:

If sweet clover is mown about July 10 or 15, will it produce a second crop of blossoms which will yield nectar? For bee-pasturage alone, how much seed should be sown per acre? C. WYNN.

Rolla, Mo., Dec. 7, 1895.

8-Frames—Fastening Foundation.

I commenced in the spring of 1895 with 12 colonies, 6 of which were in the 8-frame hives, 2 in the 10-frame, and 4 in box-hives. I now have 18 colonies, with all but 3 in the movable-frame hives. I prefer the 8-frame Langstroth hive, tiered up three stories high for extracted honey, for this reason: If you don't use the perforated zinc between the frames of the bottom and top stories, you are certain to have some patches of brood in the center frames of the second story, whether you use the 8 or 10 frame hive, it makes no difference. At least this is true with me. So the point I wish to make is this: If you want the surplus honey free from patches of brood, you must give the bees some directly above them instead of on each side as you must do with the 10-frame hive of two stories.

And as to tiering up the 10-frame hive three stories high, you must have an extra early swarm, and a rousing big one, and give them full sheets of foundation if you want the hives filled at all in this locality in one season. So the 8-frame hive is quicker and surer in results.

Now, don't misconstrue my words, and think I want all my hives of the 8-frame pattern, for if a colony gets too populous for an 8-frame hive, why, I just transfer them into a 10-frame hive during a good honey-flow, and add the extra 4 frames with full sheets of foundation in the center of the top story, and by-and-by a third story is added. Also, as the transferring process is going on, I cut out all the queen-cells so as to have no swarming during that honey-flow, which means twice as much honey as if they had swarmed.

As I do not produce comb honey, my estimates are for extracted entirely, as follows:

Poplar 36 pounds, linden 324 pounds, and buckwheat 108 pounds; total, 468 pounds, from 12 colonies, averaging 39 pounds per colony. I am not in love with buckwheat honey at all; I consider it second quality.

I see a writer from Tracy City, Tenn., asks Dr. Miller how to fasten foundation to frames, so I send a good, cheap way:

If the frames have a comb-guide, lay the foundation with the edge on the comb-guide, as you wish it to hang in the frame. Now take a common porcelain bed-caster, wet it well and roll first a little spot at each end of the comb-guide, then in the middle, then between these three spots, to get it stuck all along. Now roll back and forth with the caster till you see the foundation shine, and the work is done. I have tried this plan with satisfactory results.

J. A. BEARDEN.

Cyruston, Tenn., Dec. 7, 1895.

Quilts on Hives—Placing Hives.

My 14 colonies were put on five Langstroth frames each, standing on end and packed around with granulated cork, with cork cushion on top, about Oct. 10, 1895, in first-class condition.

I see so much in the Bee Journal about "the quilt," "turn up one corner of the quilt," "remove the quilt and take out the combs, etc.," "after returning the quilts, etc." What do people use quilts on top of the frames for? What do they do with the quilts when they get covered with propolis on both sides and stick to the cover, and stick to the frames so that if you want to look at your bees it comes off rip, rip! crack!! ker-r-r-r!!! rack!!!! There, it's off, and the bees are crazy mad, and "Git for shed" is in order, and leave the bees uncovered until they cool down. I got gloriously over that "quilt" business years ago.

The poem against low-down hives, on page 779, suits me exactly. I've been there and left for good. What any one wants to work all day with his back bent double for, is more than I can tell. I have had boards from the alighting-board to the ground for heavy-laden bees that couldn't make the entrance, to crawl upon, but I have never seen a bee alight six inches from the entrance that did not fly again to get in. About 12 or 15 inches is the right height from the ground for comfort.

My bees got their usual quota of light honey last summer—about 40 pounds per colony—and fall honey enough for winter; and I have enough combs full put away for spring. THOS. THURLOW.

Lancaster, Pa., Dec. 12, 1895.

Season of 1895—Honey-Plants.

I took out of the cellar last spring 20 colonies, one afterwards swarmed out or was robbed, leaving 19 colonies, mostly in good condition, with a good supply of honey and well stocked with bees. In May there were hard frosts which seemed to destroy all the nectar in the willow and wild fruit blossoms, and the bees, after using up the honey they carried over winter, were almost in a starving condition, but with what they gathered, and what sugar syrup they were fed, they came through alive. The scarcity of supplies did not stop them from breeding.

They commenced swarming the last of May, and kept it up till late in August. Five or six swarms left for parts unknown,

and I put about a dozen back in the hives they left; I had 2 colonies robbed and killed, took up 5 and put the bees in with other colonies, and put 33 into the cellar. There are now 52 in the cellar, young and old. Most of them have plenty of stores, but a few of them are very weak.

We got only about 200 pounds of comb honey fit for market, and about 150 pounds in partly-filled sections and in one hive "taken up." Such swarming I never dreamed of before.

There was no flow of honey last fall, although the weather seemed favorable. The previous fall the bees gathered a great deal of honey from golden-rod and asters, but last fall scarcely any.

I might tell of a good many kinks that occurred in the bee-yard, but I guess I will not ask space for that. But I want to say something about honey-plants. It seems to be a well-established fact that plants that offer an abundance of nectar in one locality may be almost worthless in another locality. There are certain plants here that the bees work on constantly and busily from morning till night. The principal of which are mignonette, phacelia, borage and clarkia; on poppies in the morning, and on chickory in the forenoon. And of those they work on more or less are balsams, marigolds, datura, nicotiana, hyssop, radish, cabbage and turnip flowers. These are all garden plants. Judging from the way bees work on them, I believe that one acre of phacelia or mignonette would produce more honey than ten acres of buckwheat. H. P. WILLSON.

Bathgate, N. D., Dec. 16, 1895.

Results of the Past Season.

The season of 1895 opened here very good. Fruit-bloom was plentiful, and the bees got to breeding up nicely, then the cold weather set in. After that white clover came into bloom, but the bees did not gather much honey from clover. The linden flow lasted here about one week. It got too dry all at once, and we did not have any rain until November. I extracted from 25 colonies, during the linden flow, 1,600 pounds of honey; 8 colonies gave me 200 pounds of comb honey in sections, not very well filled.

After the basswood bloom dried up the bees did not get a drop of honey in the fall. The latter part of August I examined my bees, and found my best colonies had only from 5 to 10 pounds of honey. That started me to feeding right off. My feeder holds 25 pounds, and sets over the brood-chamber, like the Miller feeder. In two weeks I had my 35 colonies ready for winter, and up to date they have wintered well on the nice basswood honey. HENRY BOHLMANN.

Defiance, Ohio, Dec. 16, 1895.

List of Honey and Beeswax Dealers.

Most of whom Quote in this Journal.

Chicago, Ills.

R. A. BURNETT & Co., 163 South Water Street.

New York, N. Y.

F. I. SAGE & SON, 183 Reade Street.
HILDRETH BROS. & SEGELKEN, 120 & 122 West Broadway.
CHAS. ISRAEL & BROS., 486 Canal St.

Kansas City, Mo.

C. C. CLEMONS & Co., 423 Walnut St.

Buffalo, N. Y.

BATTERSON & Co., 167 & 169 Scott St.

Hamilton, Ills.

CHAS. DADANT & SON.

Philadelphia, Pa.

WM. A. SELSER, 10 Vine St.

Cincinnati, Ohio.

C. F. MUTH & SON, cor. Freeman & Central avs.

Honey & Beeswax Market Quotations.

CHICAGO, ILL., Dec. 10.—White clover and linden, in 1-pound sections, sells at 14@15c., but other kinds of white honey sell at 12@13c.; dark and amber grades, 9@10c., of which there is a very liberal supply. Extracted, white, 5½@7c.; amber, 4½@5c.; dark, 4@5c., difference in price of each grade being in accord with its quality, fine flavor always being at a premium. Beeswax, 28@30c., and selling upon arrival. R. A. B. & Co.

PHILADELPHIA, PA., Jan. 3.—Honey has declined in this market during the holidays. Large lots of California honey arriving, and selling at 5c. in 60-lb. cans. We quote: Comb honey, fancy, 16c.; fair to good, 8@14c. Extracted, 4@5½c.; white clover, 10c.
Beeswax, 30c. W. A. S.

KANSAS CITY, MO., Jan. 8.—The demand for comb and extracted honey is fair. We quote: No. 1 white comb, 1-lbs., 13@14c.; No. 2, 12@13c.; No. 1 amber, 11@12c.; No. 2, 10c. Extracted, white, 6@6½c.; amber, 5@5½c.; dark, 4@4½c.
Beeswax, 22@25c. C. C. C. & Co.

Demand is slow for all kinds of honey. Best white comb honey sells at 12@14c. in the jobbing way. Extracted, 4@7c. on arrival.
Beeswax is in good demand at 22@27c. for good to choice yellow. C. F. M. & S.

NEW YORK, N. Y., Dec. 18.—The market on comb and extracted honey is a little dull at the present time, and we do not expect to have a very great demand until after the holidays. Then we may look for a little better sale, but the bulk of trade is done for the season. That is for comb honey; extracted we expect quite a sale of after Feb. 1, 1896. We quote: Fancy clover, 1-lbs., 15@16c.; white clover, 13@14c.; fair white, 11@12c.; buckwheat, 9@9½c. Extracted clover, 6@6½c.; basswood, 6½@7c.; buckwheat, 5c. Beeswax firm and in good demand at 29@32c.
C. I. & B.

Convention Notices.

WISCONSIN.—The annual meeting of the Wisconsin State Bee-Keepers' Association will be held Thursday and Friday, Feb. 6 and 7, 1895, in the capitol building at Madison. The program will appear in due time.
Platteville, Wis. N. E. FRANCE, Sec.

COLORADO.—The 16th annual convention of the Colorado State Bee-Keepers' Association will be held Jan. 20, 21 and 22, 1896, in the Horticultural Rooms of the Capitol Building, in Denver. Every bee-keeper is invited to be present and join the society.
Duff, Colo. FRANK RAUCHFUSS, Sec.

READERS **Of this Journal who write to any of our advertisers, either in ordering, or asking about the Goods offered, will please state that they saw the Advertisement in this paper.**

PERSONAL MENTION.

MR. JACOB ALPAUGH and family landed at North Ontario, Calif., Nov. 18, 1895, where they will make their home. Canada's loss is somebody else's gain.

PROF. COOK writes: "You are making the American Bee Journal very excellent." Thank you, Professor. We're *trying* to make it worth all any one pays for it.

MR. GEORGE D. LITTOOY, a prominent bee-keeper of Tacoma, Wash., was married Nov. 26, 1895. He says he has "the best 'queen' in Washington" for his wife. "By George," that's the way to look at her. Best wishes to our far-way friends.

MR. H. W. SCOTT, of Barre, Vt., the young and popular President of the Vermont Bee-Keepers' Association, is shown by picture and biographical sketch in Gleanings for Dec. 15. Mr. A. E. Manum prepared the surprise for Mr. Scott.

WILL WARD MITCHELL—the Progressive Bee-Keepers' own poet—is as fine looking as his poems are fine reading. His portrait appears in the January number of the paper mentioned. We won't object if he some day is called "The Second Longfellow."

MRS. L. C. AXTELL, of Roseville, Ill., has taken to writing on bees again. An article appears in Gleanings from her pen. She has lost none of her old-time enthusiasm for bee-keeping, though the seasons have been very poor in recent years in her locality.

REV. W. E. BOGARDUS, of Brookdale, N. J., said this in a letter dated Dec. 24, 1895: "The American Bee Journal was never so alive and ably conducted, so instructive and interesting, so progressive and stimulating, as now, since 1884, when I began to take and read it."

MR. L. EASTWOOD, of Waterville, Ohio, when renewing his subscription for 1896, wrote thus: "My 87th anniversary occurs Jan. 26. I still claim to be the oldest practical bee-keeper in the country. I was interested from boyhood in the bees, and have owned them for 61 years."

MRS. LUCY C. SLEASE, of Rosewell, New Mex., when sending her dollar for 1896, said: "The American Bee Journal does not keep its 'wraps' on long when it gets here. As a little boy said the other day, 'I have been here so much that I feel like I was at home.' So we feel like the Bee Journal has just got home each week."

MR. J. C. WALLENMEYER, of Evansville, Ind., last Christmas Eve., helped to organize a local "bee-keepers' union" which promises to be a great success. There were two "charter members"—Miss Jeanette Lois Millard and Mr. W. The wedding invitation sent to us is a beauty. Miss Millard was the "Queenie Jeannette" our good bee-keeping friend has been singing about the past few years. Long may they live, and happy may they be(e).

MR. J. C. BALCH, of Bronson, Kans., we are sorry to learn, has been burned out of house and home. On Dec. 26, 1895, he wrote thus:

"My house was burned with everything that was in it, on Dec. 8. Also about 250 pounds of nice mint honey. I was away from home; wife and two little girls were at home alone. The cause was a defective flue, which they did not see till the roof was dropping through on the upper floor. We saved nothing but one feather-bed, a stand-table and a few books. We are homeless in the dead of winter, with ten inches of snow."